

## ABSTRACT OF THE DISCLOSURE

In an estimation apparatus of an air intake flow for an internal combustion engine, an air intake flow rate fed into a portion just upstream of an intake valve at a predetermined timing before starting of fuel injection is calculated based on an output of an air flow meter. A variance in the air intake flow rate caused by the change in the intake pressure at the portion just upstream of the intake valve at the predetermined timing is calculated based on an output of a pressure sensor. The calculated air intake flow rate is added to the variance to obtain an air intake flow rate fed into a cylinder at the predetermined timing. The air intake flow rate fed into the cylinder is corrected to an air intake flow rate required for estimating an actual air intake flow based on an amount of change in the air intake flow rate fed into the cylinder at the predetermined timing.